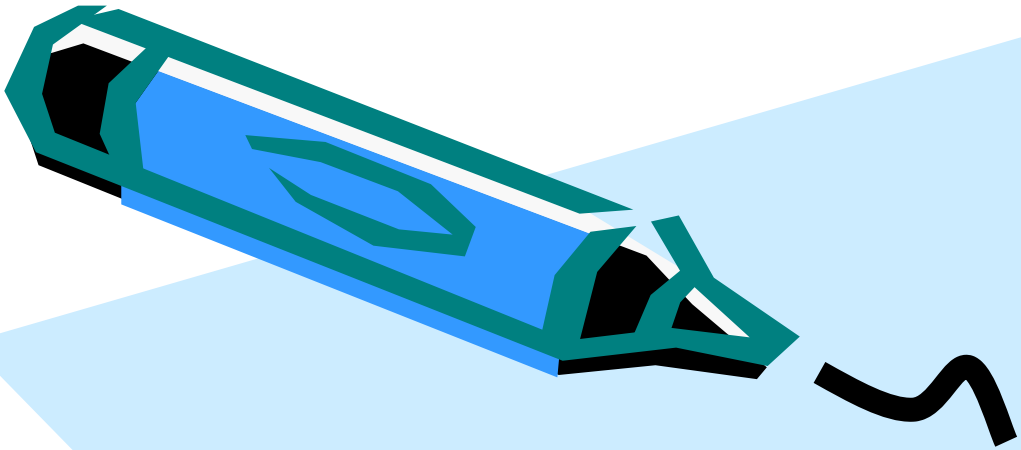


K-5 Kids Use Databases to Learn About Agriculture

A State / University / School Initiative

Fritz Getze, Assoc. Librarian & UDLib/SEARCH Coordinator, Univ. of Delaware Library

USAIN Conference, Ithaca, NY, Oct. 11, 2006

Views from the *Chronicle of Higher Education*

- …the Commission … stopped short of calling for mandatory testing of college students, [but] other provisions in the final draft of its report have caused consternation among some higher-education leaders.

- The report also pushes for changes to make the accreditation process more open, urges professors to take the lead in defining educational objectives for their students, and supports a database that would allow parents, students, and policy-makers to compare institutions. *Chronicle,* Sept 1, 2006, p42

- College-bound students face not only the issues of access [to college], but also that of readiness. . . When students arrive unprepared to do the work, it's time-consuming and costly to get them up to speed. *Chronicle,* Oct 14, 2005, p16

UD Lib/SEARCH Home Page

http://udlibsearch.lib.udel.edu/

The Coordinator in Action!

Maple Lane Elem. School, May 2006

University of Delaware

College of Agriculture & Natural Resources

UD Admission Requirements

http://www.udel.edu/apply

Apply for Admission

- Freshman applicants (US Citizens and Permanent Residents)
- Transfer applicants (US Citizens and Permanent Residents)
- International applicants
- Readmission
- Distance Learning

The 2007 application is now available:

- Complete it Online
- Download it (Fall only)
- Request a paper copy of the Fall application by adding yourself to our mailing list or calling (302) 831-8123

Freshman Applicants: What We're Looking For

The University of Delaware seeks academically ambitious and creative applicants from a variety of cultural and ethnic backgrounds and geographic regions. For information about the academic qualifications and background of our current freshman class, see our freshman class profile.

As the Admissions Committee evaluates an application for admission, it weighs the rigor of the student's high school program, academic record (especially the trend in grades), SAT Reasoning and/or ACT with Writing scores, class rank (if available), student essays, letters of recommendation, and personal statement. Special talents and abilities, Delaware residency, and alumni/ae affiliation are taken into consideration. The SAT Subject tests are recommended for all freshman applicants, especially those to the Honors Program, and if these scores are submitted the Admissions

Freshman Application Dates	
SPRING 2007 ADMISSION	
November 1	Submit the Online Application for Admission
FALL 2007 ADMISSION	
Applicants who want full consideration for all programs and scholarships and the University Honors Program:	
December 1	Submit the UD Application for Admission or the Common Application and Supplement
Applicants who want to be considered for admission to the fall semester should apply no later than the following date:	
January 15*	Submit the UD Application for Admission or the Common Application and Supplement
Mid-March	Admission Decision Notification Date
May 1	Deposit Deadline for all Regular

Subject	Years Required	Years Recommended
English	4	4
Mathematics	3	4
Science	3 (2 must include a lab)	4 (3 must include a lab)
History/Social Sciences	4*	4*
Foreign Languages	2 of same	4 of same
Academic Electives	2 units	0-2
Total	18 units	20-22 units
*at least two of the units must be history, and one of those must be world history		

* **An additional year of math or science may be substituted for the 4th year of history/social science.**

* **Foreign language courses taken before the ninth grade do not count.**

* **American Sign Language does not fulfill the foreign language requirement.**

Some programs at the University require additional preparation in math and science:

- Prospective majors in mathematics, engineering, business, computer science, or other sciences should have completed four years of mathematics, including trigonometry, pre-calculus, and/or calculus.
- Prospective majors in engineering and other science fields are strongly urged to take physics, chemistry, and biology.
- Prospective majors in nursing must have completed at least one year of both biology and chemistry.

The above criteria represent the minimum requirements to be considered for admission. Applicants typically present credentials that exceed the minimum. The academic profiles of the most competitive candidates well exceed the minimum requirements.

UD Undergraduate Research Program

UNIVERSITY OF DELAWARE

Undergraduate Research Program

Research apprenticeships with faculty mentors give talented, motivated University of Delaware undergraduates a chance to see and take part in what is happening on the front lines of discovery at UD today. Every UD college, department and research center provides opportunities for interested students to get their hands on the source of learning. About 700 students participate each year. Explore the many challenging options you have for bringing learning to life.

2006 Arts, Humanities & Social Science In View

Summer Undergraduate Research Science Symposium Program

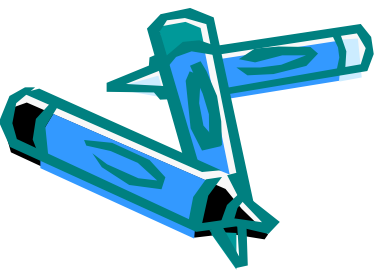
- Advice for Getting Started
- Alumni News
- Calendar of Events
- Deadlines
- Faculty Projects
- Financial Resources
- Forms
- Graduate School Information
- Policies and Procedures
- Reading Room
- Research Abroad
- Scholar Programs
- Senior Thesis Program
- Symposia & Poster Sessions

Curriculum Standards
Plusses and Minuses

- The pressure of NCLB accountability has led principals and teachers to direct time and resources toward language arts and mathematics, and, due to limited hours . . , to diminishing time for science. *Marx & Harris, 2006,* p 469

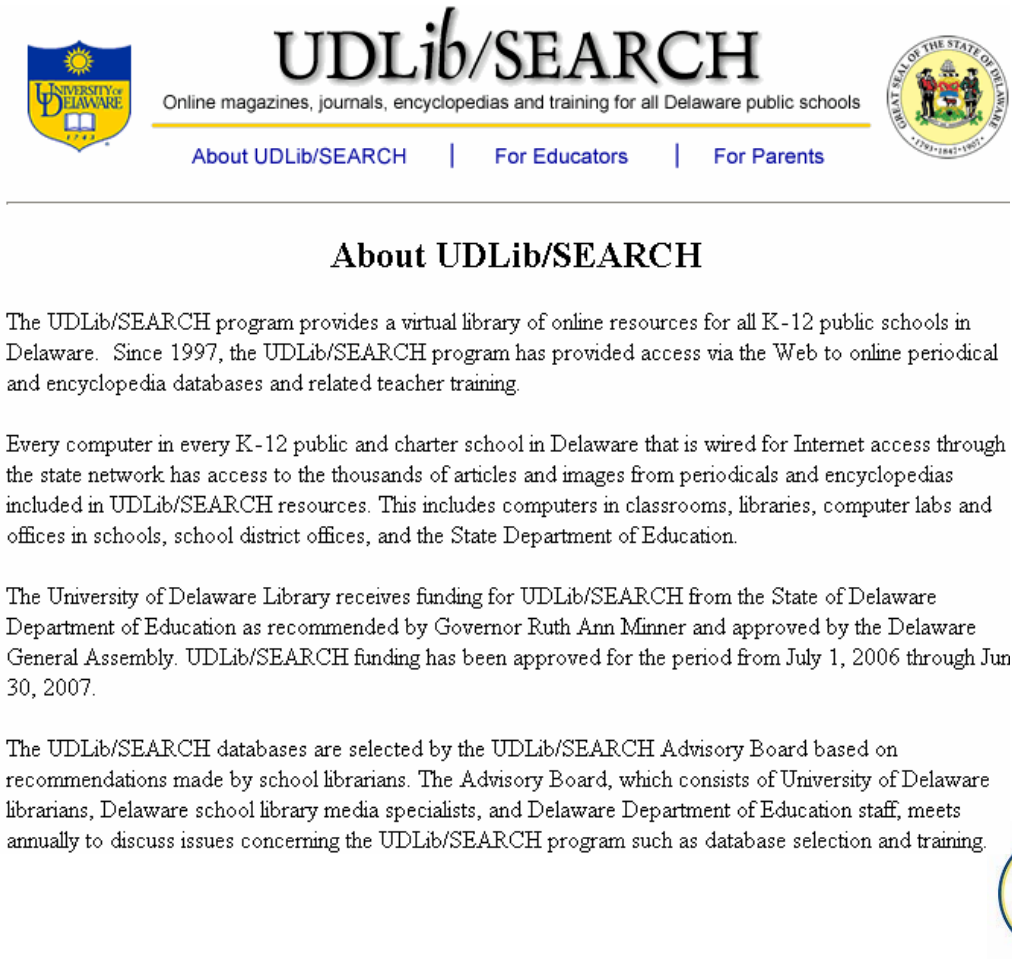
- Standards-based biology instruction would begin with engaging inquiry with materials, followed by discussion and then explanations, the opposite sequence from traditional instruction. *Leonard & Penick, 2005,* p 74

- There is now a greater emphasis on quality teaching and accountability at the local level. Agricultural education must make sure that its curriculum is current and viable. Changes have been so rapid in agriculture that often it is difficult for agricultural education to keep pace. *Stewart, et al, 2004,* p 61



UDLib/SEARCH Access

- Where found
- How funded
- Who selects



UDLib/SEARCH

Online magazines, journals, encyclopedias and training for all Delaware public schools

About UDLib/SEARCH | For Educators | For Parents

About UDLib/SEARCH

The UDLib/SEARCH program provides a virtual library of online resources for all K-12 public schools in Delaware. Since 1997, the UDLib/SEARCH program has provided access via the Web to online periodical and encyclopedia databases and related teacher training.

Every computer in every K-12 public and charter school in Delaware that is wired for Internet access through the state network has access to the thousands of articles and images from periodicals and encyclopedias included in UDLib/SEARCH resources. This includes computers in classrooms, libraries, computer labs and offices in schools, school district offices, and the State Department of Education.

The University of Delaware Library receives funding for UDLib/SEARCH from the State of Delaware Department of Education as recommended by Governor Ruth Ann Minner and approved by the Delaware General Assembly. UDLib/SEARCH funding has been approved for the period from July 1, 2006 through Jun 30, 2007.

The UDLib/SEARCH databases are selected by the UDLib/SEARCH Advisory Board based on recommendations made by school librarians. The Advisory Board, which consists of University of Delaware librarians, Delaware school library media specialists, and Delaware Department of Education staff, meets annually to discuss issues concerning the UDLib/SEARCH program such as database selection and training.

UDLib/SEARCH Elementary Databases

UDLib/SEARCH Elementary School Program

Online Magazines, Newspapers,
Encyclopedias, & Images for Young Delaware Learners

Databases for Elementary Schools

- Primary Search on Kids Search — EBSCO Primary Search on Kids Search
- kids infoBits — Gale Kids InfoBits
- SIRS Discoverer on the Web — SIRS Discoverer
- Britannica Elementary — Britannica Elementary
- World Book Online Reference Center — World Book Online

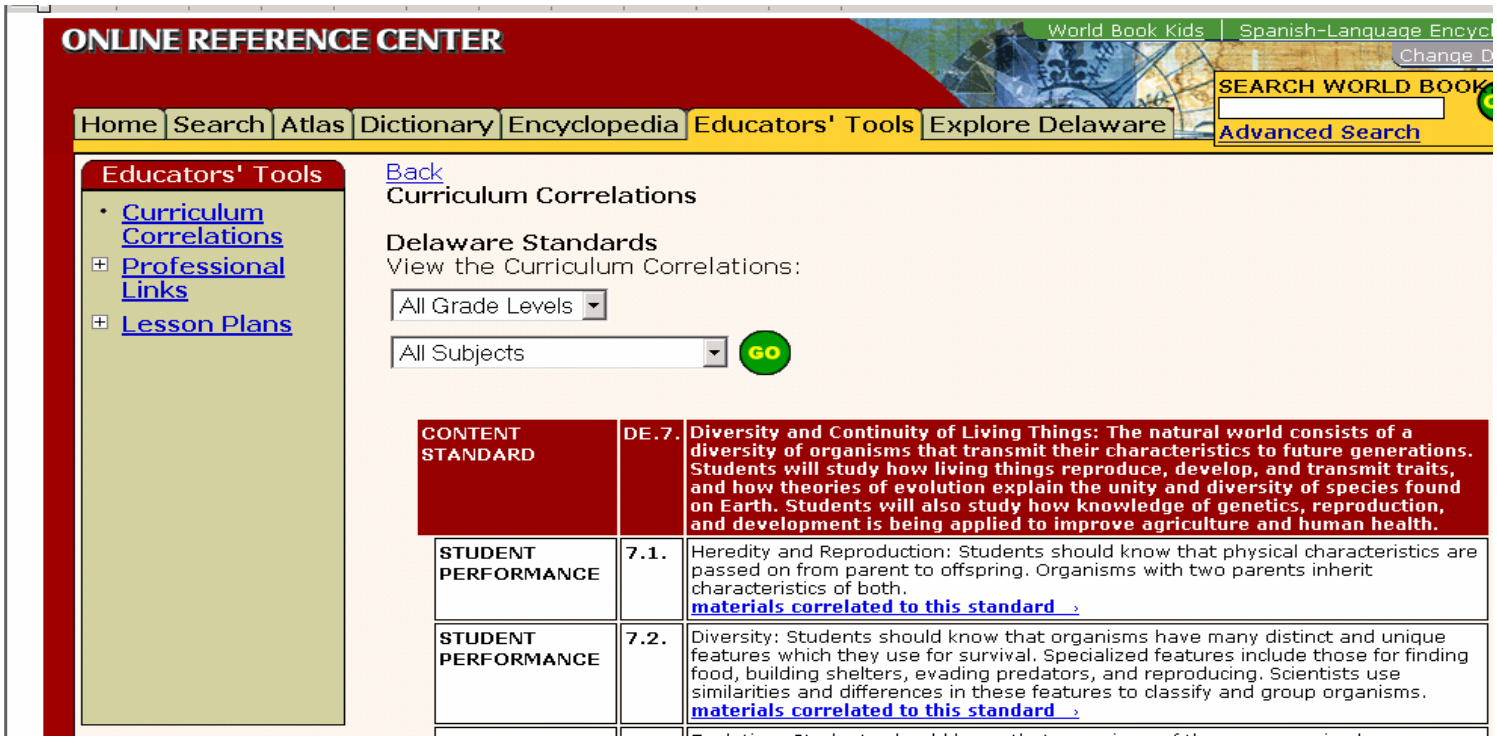
UDLib/SEARCH is a University of Delaware Library/State of Delaware partnership.

About UDLib/SEARCH | Information for Teachers & Librarians | Information for Parents | Schools

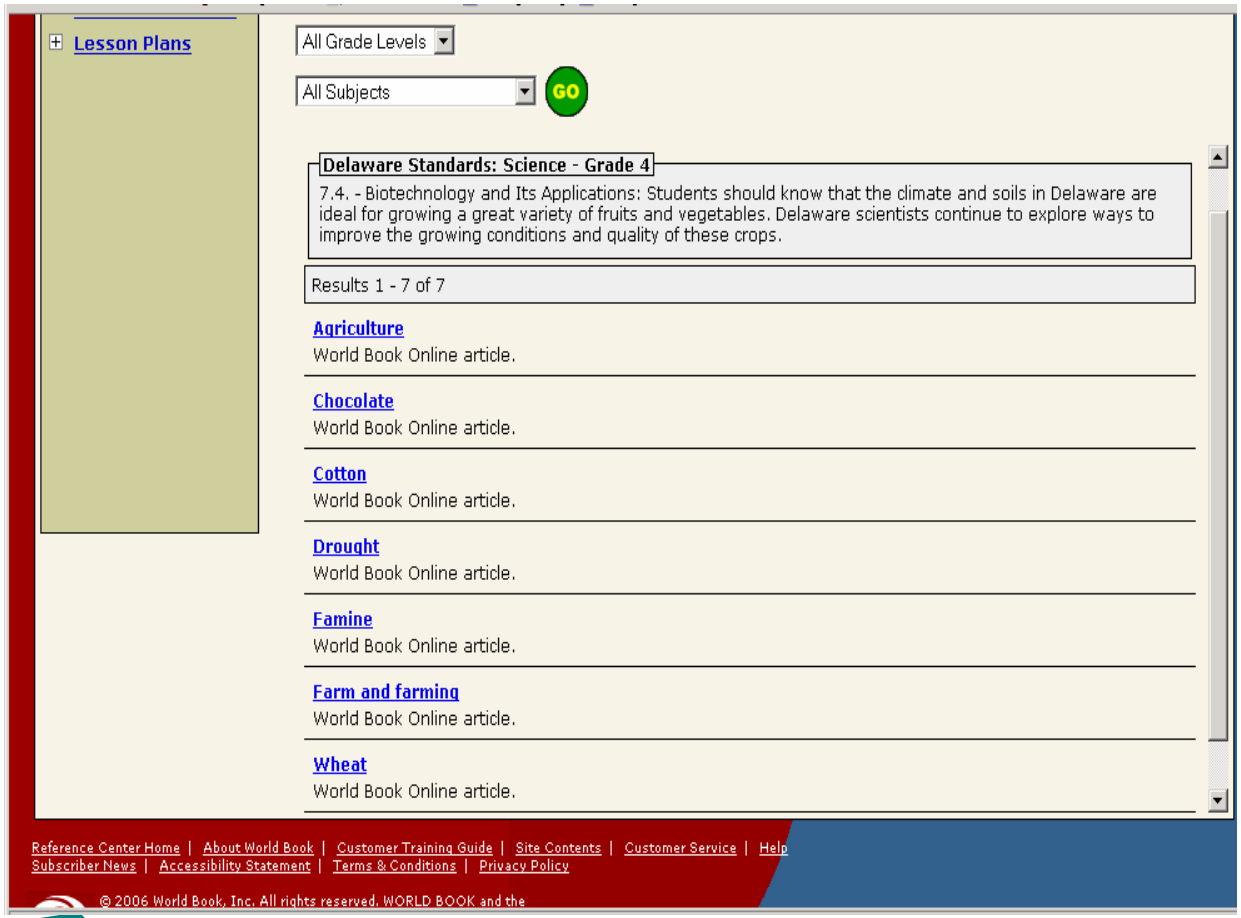
World Book Online Reference Center

http://www.worldbookonline.com/wb/Home

World Book
Curriculum Correlations



World Book


Lesson Plans
All Grade Levels
All Subjects
GO
Delaware Standards: Science - Grade 4
7.4. - Biotechnology and Its Applications: Students should know that the climate and soils in Delaware are ideal for growing a great variety of fruits and vegetables. Delaware scientists continue to explore ways to improve the growing conditions and quality of these crops.
Results 1 - 7 of 7
Agriculture
World Book Online article.
Chocolate
World Book Online article.
Cotton
World Book Online article.
Drought
World Book Online article.
Famine
World Book Online article.
Farm and farming
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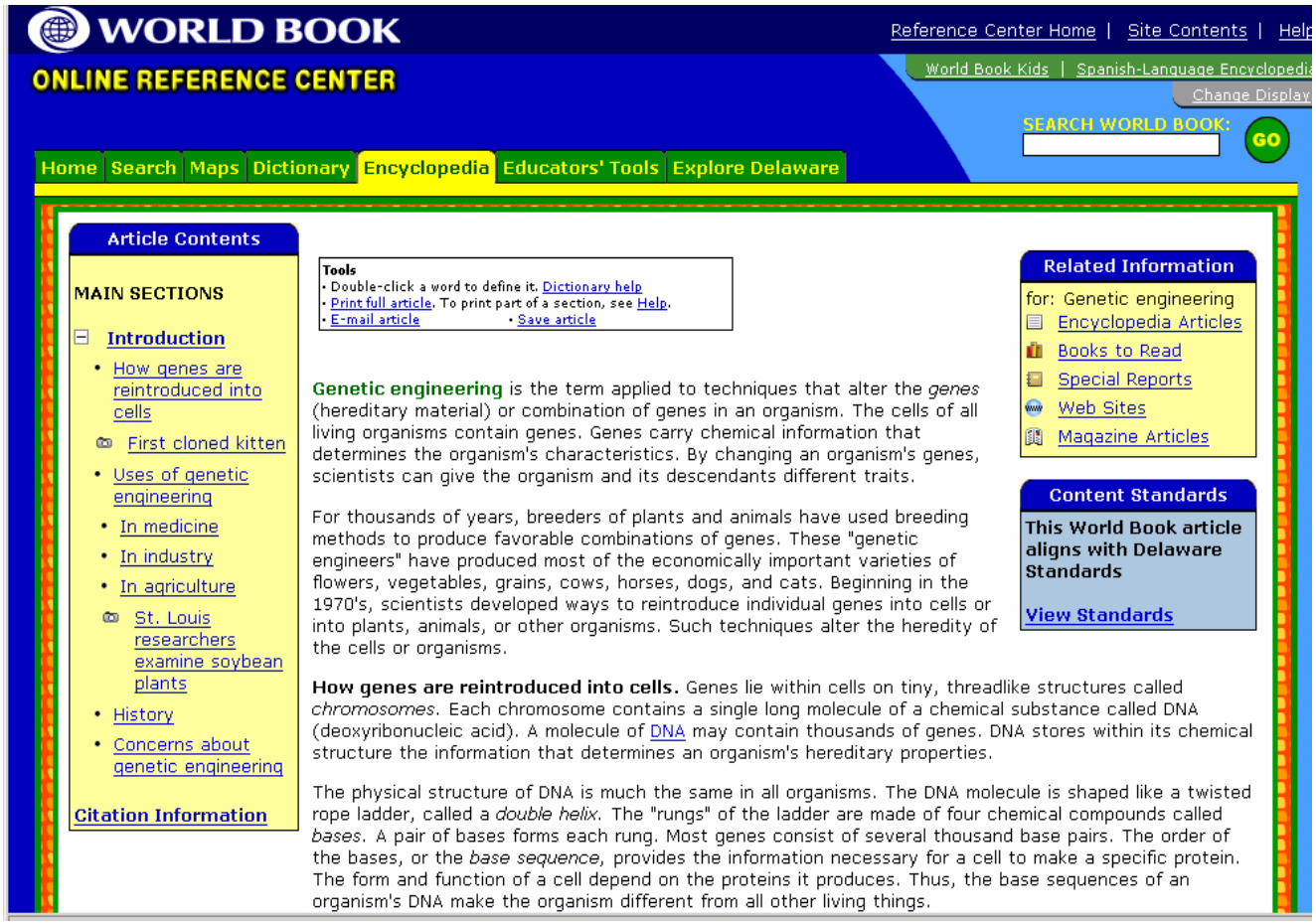
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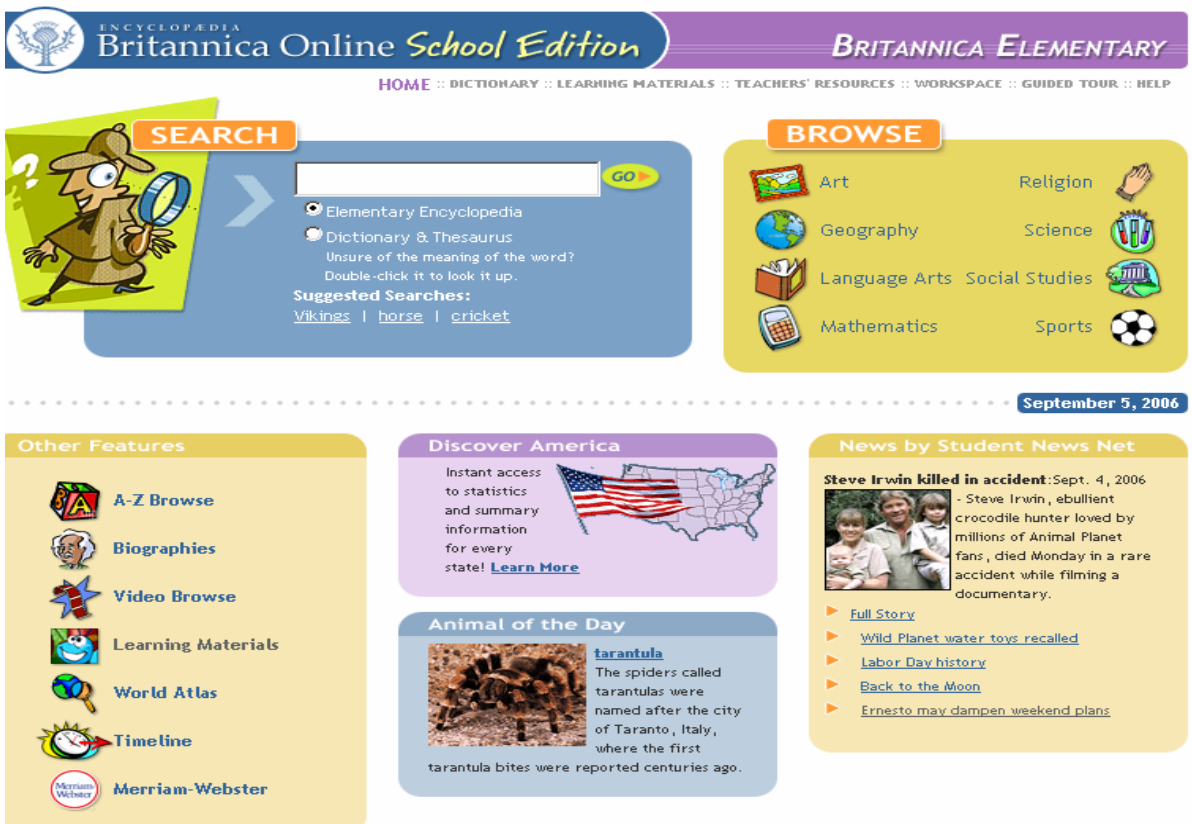
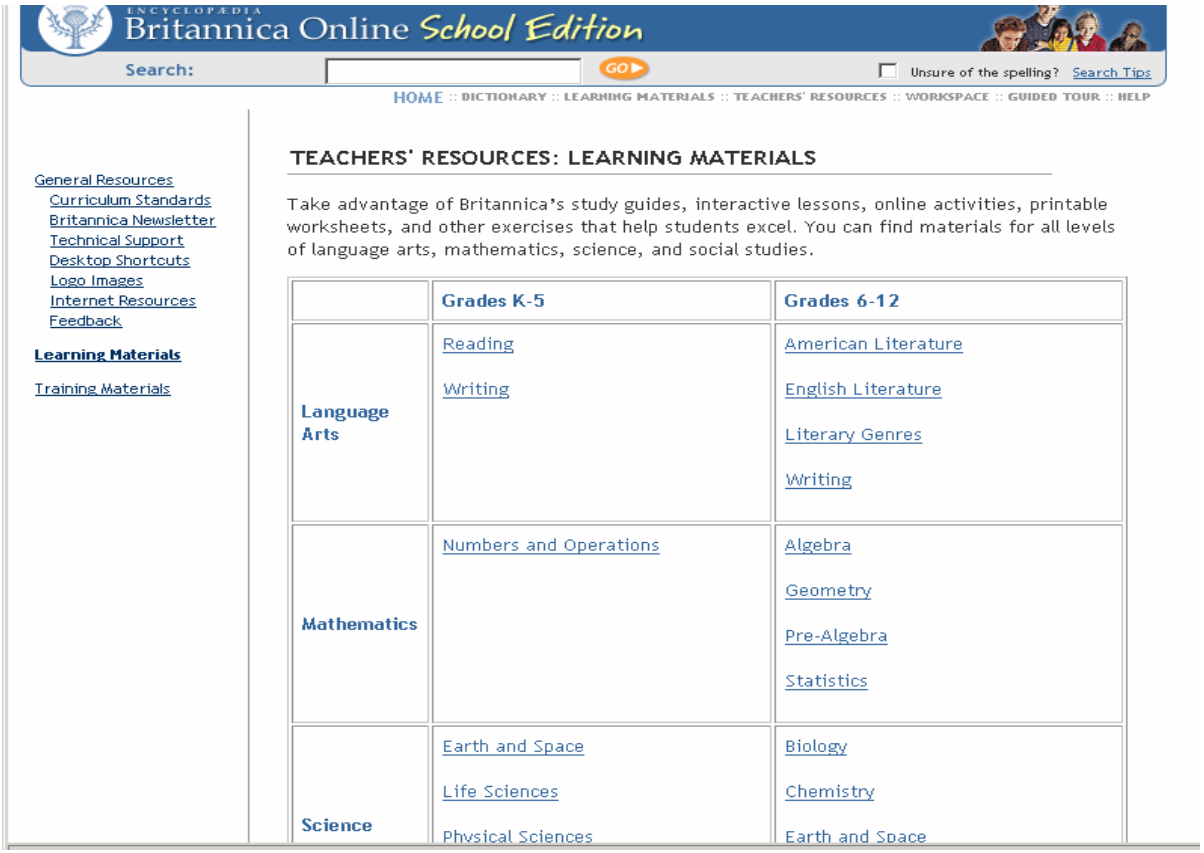
MAIN SECTIONS
Introduction
How genes are reintroduced into cells
First cloned kitten
Uses of genetic engineering
In medicine
In industry
In agriculture
St. Louis researchers examine soybean plants
History
Concerns about genetic engineering
Citation Information
Tools
Double-click a word to define it. Dictionary help
Print full article. To print part of a section, see Help.
E-mail article
Save article
Related Information
for: Genetic engineering
Encyclopedia Articles
Books to Read
Special Reports
Web Sites
Magazine Articles
Content Standards
This World Book article aligns with Delaware Standards
View Standards
Genetic engineering is the term applied to techniques that alter the genes (hereditary material) or combination of genes in an organism. The cells of all living organisms contain genes. Genes carry chemical information that determines the organism's characteristics. By changing an organism's genes, scientists can give the organism and its descendants different traits.
For thousands of years, breeders of plants and animals have used breeding methods to produce favorable combinations of genes. These "genetic engineers" have produced most of the economically important varieties of flowers, vegetables, grains, cows, horses, dogs, and cats. Beginning in the 1970's, scientists developed ways to reintroduce individual genes into cells or into plants, animals, or other organisms. Such techniques alter the heredity of the cells or organisms.
How genes are reintroduced into cells. Genes lie within cells on tiny, threadlike structures called chromosomes. Each chromosome contains a single long molecule of a chemical substance called DNA (deoxyribonucleic acid). A molecule of DNA may contain thousands of genes. DNA stores within its chemical structure the information that determines an organism's hereditary properties.
The physical structure of DNA is much the same in all organisms. The DNA molecule is shaped like a twisted rope ladder, called a double helix. The "rungs" of the ladder are made of four chemical compounds called bases. A pair of bases forms each rung. Most genes consist of several thousand base pairs. The order of the bases, or the base sequence, provides the information necessary for a cell to make a specific protein. The form and function of a cell depend on the proteins it produces. Thus, the base sequences of an organism's DNA make the organism different from all other living things.

Britannica Elementary



Britannica Teachers' Resources



ENCYCLOPÆDIA Britannica Online School Edition

Search: GO Unsure of the spelling? Search Tips

HOME :: DICTIONARY :: LEARNING MATERIALS :: TEACHERS' RESOURCES :: WORKSPACE :: GUIDED TOUR :: HELP

General Resources
- Curriculum Standards
- Britannica Newsletter
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- Desktop Shortcuts
- Logo Images
- Internet Resources
- Feedback

Learning Materials

Training Materials

TEACHERS' RESOURCES: LEARNING MATERIALS

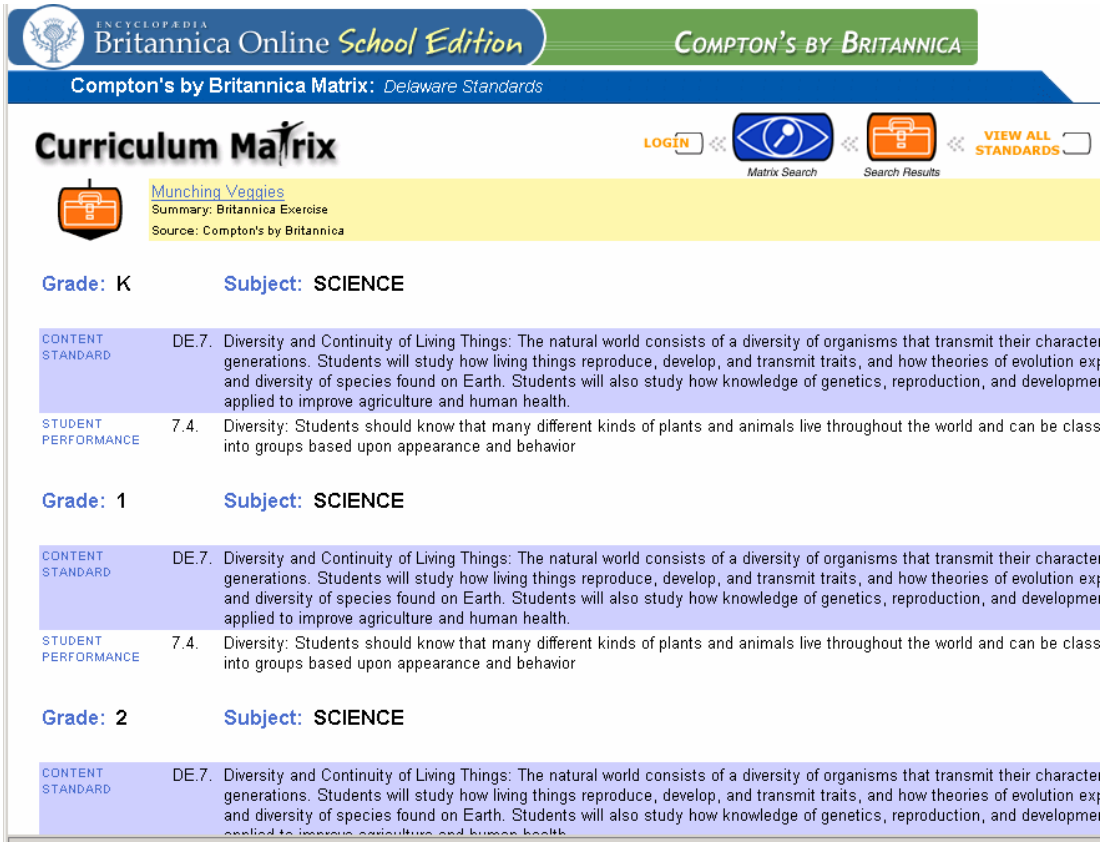
Take advantage of Britannica's study guides, interactive lessons, online activities, printable worksheets, and other exercises that help students excel. You can find materials for all levels of language arts, mathematics, science, and social studies.

	Grades K-5	Grades 6-12
Language Arts	Reading Writing	American Literature English Literature Literary Genres Writing
Mathematics	Numbers and Operations	Algebra Geometry Pre-Algebra Statistics
Science	Earth and Space Life Sciences Physical Sciences	Biology Chemistry Earth and Space

Britannica Curriculum Matrix

Munching Veggies

http://www.school.eb.com/elementary/browse/learning?subject=Life%20Science&level=&category=Exercises



Encyclopædia Britannica Online School Edition — Compton's by Britannica

Compton's by Britannica Matrix: *Delaware Standards*

Curriculum Matrix

LOGIN | Matrix Search | Search Results | VIEW ALL STANDARDS

Munching Veggies
Summary: Britannica Exercise
Source: Compton's by Britannica

Grade: K **Subject: SCIENCE**

CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things: The natural world consists of a diversity of organisms that transmit their characte generations. Students will study how living things reproduce, develop, and transmit traits, and how theories of evolution ex and diversity of species found on Earth. Students will also study how knowledge of genetics, reproduction, and developme applied to improve agriculture and human health.
STUDENT PERFORMANCE	7.4.	Diversity: Students should know that many different kinds of plants and animals live throughout the world and can be class into groups based upon appearance and behavior

Grade: 1 **Subject: SCIENCE**

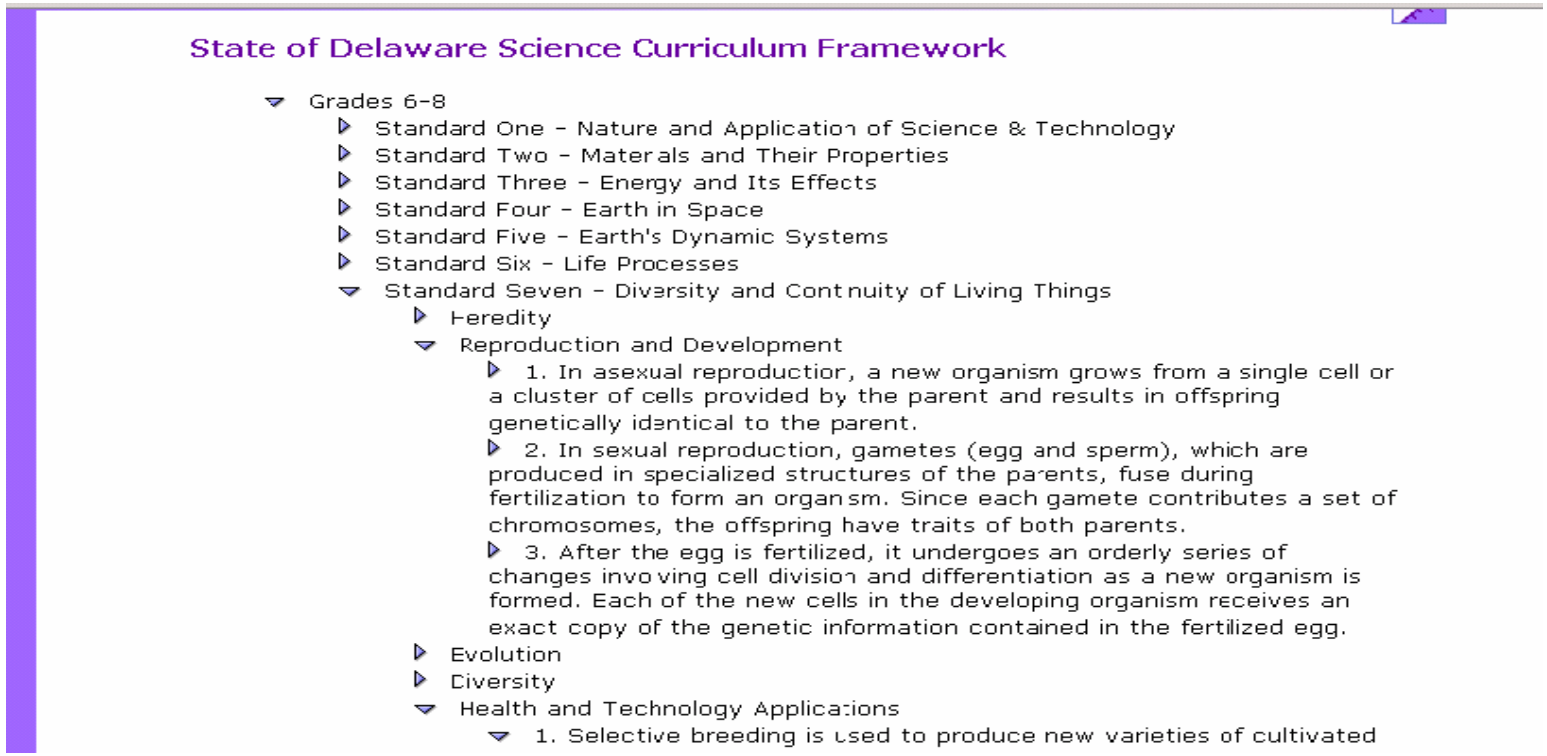
CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things: The natural world consists of a diversity of organisms that transmit their characte generations. Students will study how living things reproduce, develop, and transmit traits, and how theories of evolution ex and diversity of species found on Earth. Students will also study how knowledge of genetics, reproduction, and developme applied to improve agriculture and human health.
STUDENT PERFORMANCE	7.4.	Diversity: Students should know that many different kinds of plants and animals live throughout the world and can be class into groups based upon appearance and behavior

Grade: 2 **Subject: SCIENCE**

CONTENT STANDARD	DE.7.	Diversity and Continuity of Living Things: The natural world consists of a diversity of organisms that transmit their characte generations. Students will study how living things reproduce, develop, and transmit traits, and how theories of evolution ex and diversity of species found on Earth. Students will also study how knowledge of genetics, reproduction, and developme

SIRS Discoverer

SIRS Curriculum Framework



State of Delaware Science Curriculum Framework

- Grades 6-8
  - Standard One - Nature and Application of Science & Technology
  - Standard Two - Materials and Their Properties
  - Standard Three - Energy and Its Effects
  - Standard Four - Earth in Space
  - Standard Five - Earth's Dynamic Systems
  - Standard Six - Life Processes
  - Standard Seven - Diversity and Continuity of Living Things
    - Heredity
    - Reproduction and Development
      - 1. In asexual reproduction, a new organism grows from a single cell or a cluster of cells provided by the parent and results in offspring genetically identical to the parent.
      - 2. In sexual reproduction, gametes (egg and sperm), which are produced in specialized structures of the parents, fuse during fertilization to form an organism. Since each gamete contributes a set of chromosomes, the offspring have traits of both parents.
      - 3. After the egg is fertilized, it undergoes an orderly series of changes involving cell division and differentiation as a new organism is formed. Each of the new cells in the developing organism receives an exact copy of the genetic information contained in the fertilized egg.
    - Evolution
    - Diversity
    - Health and Technology Applications
      - 1. Selective breeding is used to produce new varieties of cultivated

SIRS Matrix Search "Birds"

State of Delaware Science Curriculum Framework

Grades 6-8

Standard Seven - Diversity and Continuity of Living Things

Health and Technology Applications

1. Selective breeding is used to produce new varieties of cultivated plants and domesticated animals with enhanced traits.

Use a variety of resources to develop a report on selective breeding. Select a cultivated plant (e.g., Super Sweet Corn, Sugar Baby Watermelon) or domesticated animal (e.g., Ovenstuffer Roaster, Low Fat Hogs) and trace its history of development and the traits of the plant or animal that were enhanced by selective breeding.

Birds

Mammals

SIRS "Birds" Search

-> Avian Flu

SIRS Discoverer on the web — Subject Tree Search

Home Page | Back | Dictionary | Thesaurus | Help | Tips | Cite

34 All Articles | 14 Newspapers | 9 Magazines | 0 Reference | 34 Pictures | 0 WebFind Sites

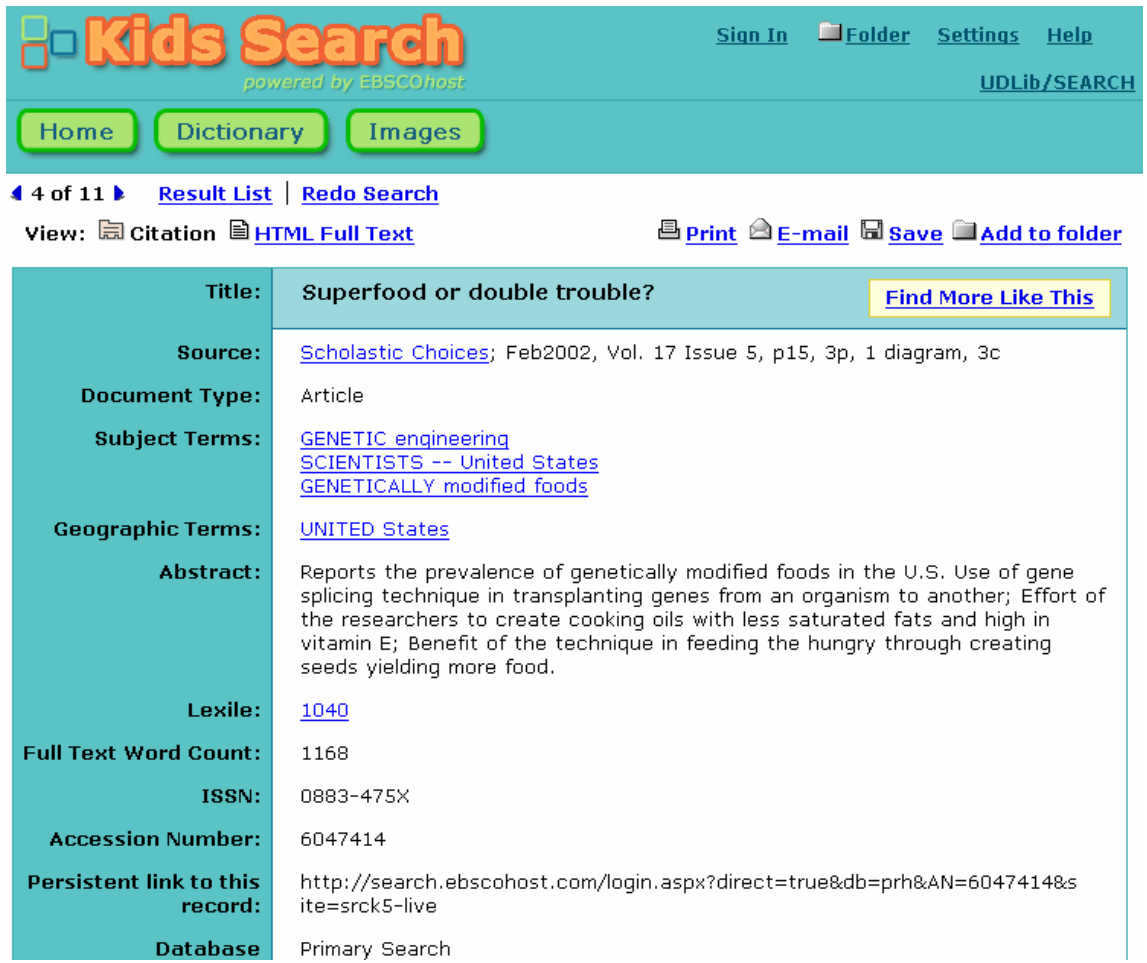
HOME < ANIMALS < Birds < chickens, hens & roosters

Reading Levels / Source & Summary: General, Easy, Moderate, Challenging | Subjects | Pictures | Activities | Fiction | People

Sort by: [Title | Publication | Lexile | *Date*] Details: [Show | Hide]

1. The Race Against Avian Flu
   Teen Newsweek (Vol. 7, No. 8); Oct. 31, 2005; Lexile Score: 970; 13K.
   Summary: "Health officials in Romania and around the world are alarmed about an exceptionally lethal virus called avian influenza, or bird flu. Although all birds are thought to be vulnerable to the disease, some wild birds can carry the virus for a while without getting sick. For domesticated birds, such as chickens and turkeys, however, bird flu strikes fast and is usually fatal. Among birds, the virus is very contagious. Normally, avian influenza viruses infect only birds. But a strain of bird flu known as H5N1 can infect humans." (***Teen Newsweek***) Learn more about avian influenza and find out how people are trying to stop the spread of this virus. A vaccine for avian influenza and the spread of the "Spanish flu" in 1918 are highlighted. Background information and discussion questions are presented.
   Descriptors: Avian influenza, Birds as carriers of disease, Communicable diseases, Prevention, Epidemics, Public health, Vaccines, World Health Organization, Zoonoses, Communicable diseases, Treatment, 2001: A Space Odyssey (Film)
2. A Day in the Life of a Chicken Farmer
   Clubhouse Jr. (Vol. 18, No. 2); Feb. 2005; Lexile Score: 710; 6K.
   Summary: "Six-year-old **Christopher** and his brother **Ethan**, 3, are glad for their dad. He's a real-life chicken farmer from Indiana! His name is **Anthony Rust**, and he knows more than most people do about raising birds." (***Clubhouse Jr.***) Follow Farmer Anthony through a day of work at his chicken farm. Learn how he takes care of his chickens and sorts their eggs. Some facts about raising chickens are presented.
   Descriptors: Agriculture, Chickens, Farmers, Eggs, Eggs, Grading, Eggs, Production
3. Critter Card Cutouts (September 2004)
   Kind News; Sept. 2004; Lexile Score: 990; 2K.
   Summary: Meet three winners of from the Humane Society's 11th annual Farm Animal of the Year contest. The personal stories of Ezell the goat, Chester the Yorkshire hog and Slick the rooster are presented.
   Descriptors: Chickens, Contests, Goats, Livestock, Swine, Animal sanctuaries
4. Bird Flu: Know More About It!
   Young Generation (Bukit Merah Central, Singapore) Issue No. 275; March 2004; Lexile Score: 1250; 5K.
   Summary: "Avian influenza, or '*bird flu*', is a contagious disease of animals caused by viruses that normally infect only birds and, less commonly, pigs. It was first identified in Italy more than 100 years ago. While all bird species are thought to be vulnerable, domestic poultry is especially prone to such infections. This *bird flu* can rapidly reach epidemic proportions if measures are not taken to prevent or control it." (***Young Generation***) Learn how the bird flu virus can be transmitted outside a country's borders and find out what steps can be taken to stop the spread of this costly disease. The signs and symptoms of the two forms of bird flu are described.
   Descriptors: Avian influenza, Birds as carriers of disease, Chicken industry, Communicable diseases, Prevention, Zoonoses, Poultry, Diseases

EBSCO Kids Search



Kids Search Full Text

Database: *Primary Search*

SUPERFOOD OR DOUBLE TROUBLE?

Find More Like This

Contents

Section: Nutrition/Food Safety

Genetically modified foods cook up a sizzling debate By Nancy Fitzgerald & Nicole Dyer

Stroll down a supermarket aisle and pick up any of your favorite munchies — corn chips, soda, ice cream. Sounds good. But how would you feel if you knew these foods contained microscopic bits of fish, or even bacteria? Hard to believe?

Today, nearly 70 percent of processed foods sold in the United States contain ingredients that have been injected with foreign genes, hereditary information in cells that control an organism's growth. The lab technique, gene splicing (see diagram on page 17) lets scientists transplant genes from almost any organism into another. These types of creations are called genetically modified organisms (GMOs). GMOs are in everything from corn flakes to dog chow.

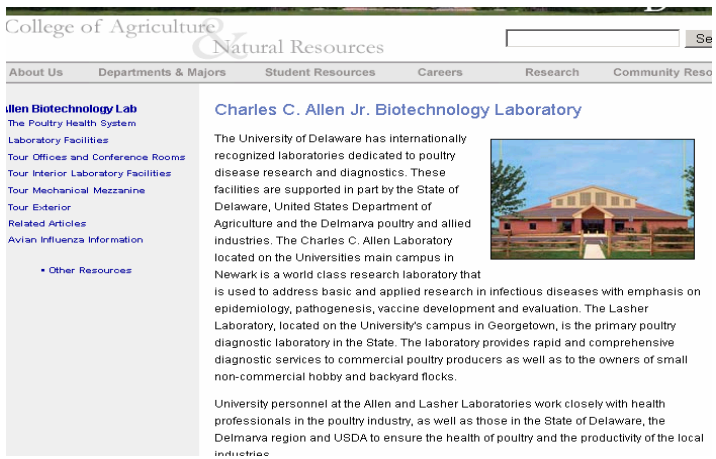
Genetic engineering shows remarkable real-life potential: worm-proof corn or cancer-fighting tomatoes, for example. But genetically modified foods have also ignited a firestorm of protest. Critics warn of unforeseen side effects: allergic reactions in people, environmental damage, and poisoned wildlife. Only about a third of Americans believe that GMOs are safe to eat, according to a recent ABC News survey.

Do we know enough about ***genetic engineering*** to experiment with the world's food supply? Read the pros and cons fueling the GM-food debate — then make up your own mind.

PROS

- **GMOs help fight disease.** Work is under way to create foods with "built-in" medicines that thwart disease. For instance, scientists at the Boyce Thompson Institute at Cornell University in Ithaca, New York, isolated genes from the hepatitis B virus, infectious particle that causes deadly liver disease. Then they spliced the virus genes into a banana's ***DNA*** to create an edible vaccine, a medicine used to trigger the body's

Student Opportunities at the University of Delaware



Last Words . . .

- **Major improvements are needed in our approach to the teaching of science . . . at the college and university level as well as at the pre-college level, and we should not leave it to any separate group to lead the way toward improved learning and understanding.** *--Moore, 2006*

- **Agricultural experts indicated that youth in agriculture was a significant issue, . . . a positive sign for the agricultural education community since it indicates that there is a need for more youth to pursue involvement in agriculture. The fact that agricultural experts see this . . . need indicates that there is a high need for what agriculture education does.** *--Stewart, et al, 2004*, p. 63.

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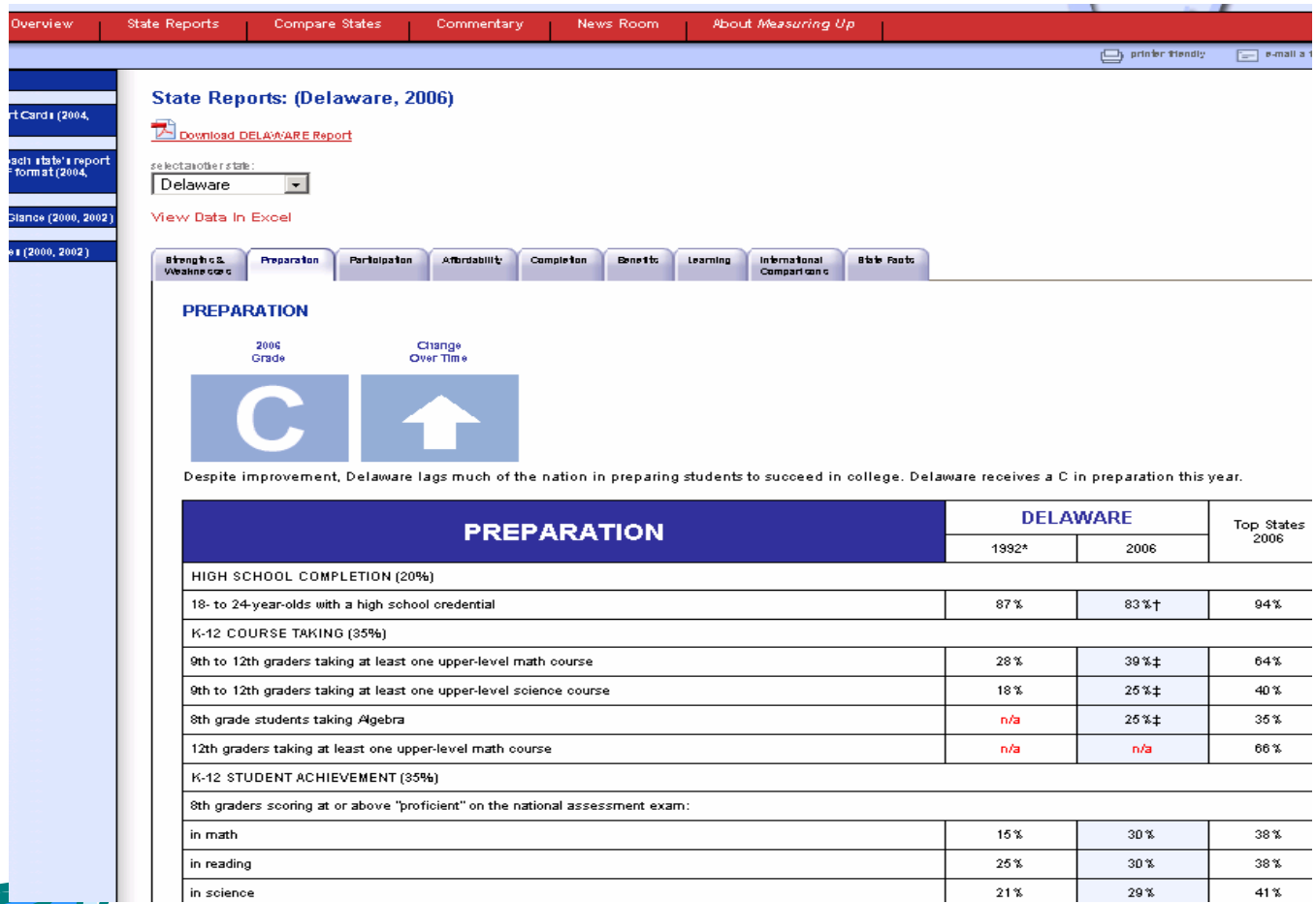
Post Script

Measuring up 2006: the state report card on higher education. Delaware.



PREPARATION	DELAWARE		Top States 2006
	1992*	2006	
HIGH SCHOOL COMPLETION (20%)			
18- to 24-year-olds with a high school credential	87%	83%†	94%
K-12 COURSE TAKING (35%)			
9th to 12th graders taking at least one upper-level math course	28%	39%‡	64%
9th to 12th graders taking at least one upper-level science course	18%	25%‡	40%
8th grade students taking Algebra	n/a	25%‡	35%
12th graders taking at least one upper-level math course	n/a	n/a	66%
K-12 STUDENT ACHIEVEMENT (35%)			
8th graders scoring at or above "proficient" on the national assessment exam:			
in math	15%	30%	38%
in reading	25%	30%	38%
in science	21%	29%	41%